



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2003/00014

March 18, 2003

Mr. Lawrence Evans
U.S. Army Corps of Engineers, Portland District
ATTN: Kathryn Harris
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation on the Effects of the Rood Bridge Road Bridge
Replacement Project, Tualatin River, Washington County, Oregon (Corps No. 2002-
00980)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) prepared by the National Marine Fisheries Service (NOAA Fisheries), on the effects of the proposed Rood Bridge Road Bridge Replacement Project, Tualatin River, Washington County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Upper Willamette River steelhead (*Oncorhynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Christy Fellas of my staff in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

Michael R. Crouse
for

D. Robert Lohn
Regional Administrator



cc: Todd Watkins, Washington County

Endangered Species Act - Section 7 Consultation Biological Opinion

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Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Rood Bridge Road Bridge Replacement Project,
Tualatin River, Washington County, Oregon
(Corps No. 2002-00980)

Agency: U.S. Army Corps of Engineers

Consultation
Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: March 18, 2003

Issued by: *for Michael R. Crouse*

D. Robert Lohn
Regional Administrator

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1. INTRODUCTION

1.1 Consultation History

On January 13, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a letter from the Corps of Engineers (COE) requesting formal consultation on the issuance of a permit to Washington County Department of Land Use and Transportation for a bridge replacement project on Rood Bridge Road in Washington County, Oregon. In the January letter, the COE determined that Upper Willamette River steelhead (*Oncorhynchus mykiss*) may occur within the project area, and that the proposed project is “likely to adversely affect” (LAA) the subject listed species. Upper Willamette River steelhead salmon were listed as threatened on March 25, 1999 (64 FR 14517), and protective regulations went in to effect on July 10, 2000 (65 FR 42422).

NOAA Fisheries prepared this biological opinion (Opinion) to address affects of the proposed project on this species. The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species.

1.2 Proposed Action

Proposed Structure

The proposed structure is a 682-foot-long, six-span bridge consisting of four 120-foot spans of 60 inches, and two 100-foot spans with a cast-in-place deck. The typical section consists of two 12-foot travel lanes with one six-foot-wide shoulder and one eight-foot-wide shoulder to accommodate bicycles. The substructure will consist of concrete piers supported by steel pipe piling.

The construction of the bridge requires closure of the road with a detour around the project over existing adjacent roads. The maximum detour length would be approximately 8.5 miles from each end of the bridge. Highway 219 is a convenient detour for the majority of the traffic and would not add significantly to the length of travel around the project. The selected alignment matches the existing bridge’s centerline and would have the least impact to the golf course and the adjacent City of Hillsboro Park’s facility. The south end of the project requires minor impacts to the berm along the golf course due to the wider roadway section.

The volume of excavation below the ordinary high water elevation consists of 50 cubic yards associated with the removal of the existing concrete piers. The volume of fill below the ordinary high water elevation is 109 cubic yards of concrete and is associated with the construction of the bridge bents.

Stormwater

Currently, untreated stormwater flows from the existing road surface into the Tualatin River through holes in the deck of the bridge. After the construction of the new bridge, all stormwater will be treated prior to entering the river. Stormwater, which will be collected at the southern end of the bridge, will flow through a water quality manhole. The water quality manhole consists of

an oil-water separator and sediment trap. This water will then flow down an open swale under the bridge, through a wetland and into the Tualatin River. The swale will be lined with coir fabric and seeded with native grasses, rushes and sedges. The perimeter of the swale will be planted with a variety of native shrubs, including red osier dogwood (*Cornus stolonifera*), Sitka willow (*Salix sitchensis*) and serviceberry (*Holodiscus discolor*).

Temporary Construction Easement

A temporary construction easement (TCE) will be established along the west side of the bridge. This easement will extend approximately 60 to 90 feet from the centerline of the existing bridge. Construction access and the storage of construction material will be limited to the TCE. Upon completion of the project, wetlands and riparian areas within the TCE will be restored.

Silt fence will be placed along the western edge of the TCE to clearly define its outer limits. This will ensure that contractors do not encroach into private property, riparian and wetland areas further to the west. A temporary construction access road, with a finished road width of 18 feet, will be constructed within the TCE. Vehicular access to the construction site will be confined to the road, which will be removed at the end of the 2004 in-water work period. The temporary access road has been designed to ensure that there will be no adverse affects to water quality. It will be constructed by first laying chain link fence on the ground and covering the fence with a geotextile fabric. Class 25 rock will be placed on top of the geotextile fabric. Smaller diameter material (fines) will be removed from the rock before placement by first passing the material through a three- to four-inch sieve. The rock is of sufficiently large sizes that will not move during seasonal flooding events, and the lack of fines will ensure there is no increase in turbidity. When the temporary access road is no longer needed, the fence and the geotextile fabric will ensure complete removal of the rock.

A temporary work bridge will be constructed within the TCE along the west side of the existing bridge. The new bridge will span the river, but its footings will be below the two-year recurrence flood interval for the river. The construction of the temporary bridge will require the placement of two driven-steel pile bents within the river. These pile bents will be constructed at the beginning of the 2003 in-water period, and will be removed no later than the 2004 in-water work period. The installation of the pile bents will not result in sediment entering the water due to the use of sediment containment barriers. The temporary access bridge will require the removal of two Oregon ash (*Fraxinus latifolia*) trees (35-inch diameter and 12-inch diameter) and one eight-inch diameter Pacific willow (*Salix lasiandra*). In addition, a stand of red osier dogwood and Himalayan blackberry will be removed.

Although much of the project construction will be completed within 2003, the temporary work bridge will not be able to be completely dismantled until the 2004 in-water period.

Utility Activities

There are currently three utilities located in the Rood Bridge Road Bridge Project corridor: Northwest Natural Gas (NWNG), Portland General Electric (PGE), and Verizon. NWNG and PGE are located on the west side of the road. NWNG is located on the bridge and installed with

metal hangers. PGE is located overhead on wooden poles. Verizon is located overhead on the east side of the road, also on wooden poles.

Before the existing bridge is removed, the natural gas line needs to be moved and de-energized. Due to its close proximity to a large coffer dam for the new bridge piers and the piles for the temporary construction bridge, it is difficult and dangerous to attempt to bore the new gas line on the west side of the bridge. Instead, the gas line will be bored on the east side of the bridge to place it as far away from the proposed pile driving activities as possible. Because of the length of the bridge across the Tualatin River floodplain, NWNG will have to bore the new line in two phases. They propose to bore north-to-south for the north portion of the relocation. They would then reset their bore machine at the surfacing location and continue with the bore to the south, where they would re-route their line back to the west side of the road. The gas line terminates just south of this project, at the Meriwether Golf Course, and it is impossible for NWNG to cut the gas at this location and loop their system. This relocation would be permanent, and no further activity in the project corridor is expected.

PGE is also proposing to re-route their line from the west side of the road to the east side of the road. They are proposing to install new poles on the east side of the road, then re-route the line back to the west side of the road. PGE will access the new poles on the east side by utilizing the temporary access road. Verizon will share the new poles with PGE.

Activities required to ensure the utilities are updated, in a safe location, and will not involve effects to wetlands or the loss of trees. The bore hole on the north side of the bridge is at the top of the slope within park property. The bore hole to the south of the river is in an upland area within the footprint of the proposed wetland mitigation area. This bore hole will be refilled, seeded and planted following the proposed mitigation plan. Careful review of the bore hole restoration will ensure the creation of wetland in this area is successful.

Wetland mitigation

Minimal impacts to wetlands and riparian areas are proposed within the action area. Permanent wetland impacts will be to 0.18 acres of wetland on the south side of the river. The wetland impacts are from the construction of a water quality treatment facility (0.17 acres) and the construction of a new bridge pier (0.01 acre). The wetland to be permanently altered is dominated by reed canarygrass and is located beneath the existing bridge. No trees or shrubs within the wetland will be adversely affected.

To compensate for the adverse effects to 0.18 acres of reed canarygrass-dominated wetland on the south side of the river, 0.26 acres of upland (open pasture) to the north of the existing wetland and to the east of the bridge will be transformed into a scrub shrub wetland. In addition, 0.02 acres of the existing reed canarygrass dominated wetland will be enhanced through the planting of native trees and shrubs.

Construction activity within the TCE will temporarily adversely affect 0.30 acres of riparian area and 0.12 acres of wetland to the west of the bridge. The 0.12 acres of wetland adversely affected

by the construction of the temporary access road will be completely restored once the road has been removed. Disturbed riparian areas will be planted with native trees and shrubs after construction is complete.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

The action area is defined by NOAA Fisheries' regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area is the Tualatin River adjacent to the work area and downstream to the limit of visible turbidity.

Essential habitat features for salmonids are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. The proposed action may affect the essential habitat features of water quality, riparian vegetation and substrate. The Tualatin River within the action area serves as a migration area for UWR steelhead.

2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402. NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of UWR steelhead under the existing environmental baseline.

2.1.2.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list UWR steelhead (Busby *et al.*, 1996) for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

2.1.2.2 Environmental Baseline

The Willamette River watershed covers a vast area (11,500 square miles) bordered on the east and west by the Cascades and the Pacific coast ranges. It drains from as far south as Cottage Grove, and flows north to its confluence with the Columbia River. The Willamette River watershed is the largest river basin in Oregon. It is home to most of the state's population, its largest cities, and many major industries. The watershed also contains some of Oregon's most productive agricultural lands, and supports important fishery resources (City of Portland 2001).

The uplands (Coast and Cascade Ranges) receive about 80% of the precipitation falling on the Willamette River basin, and store much of this water as snow. Ecosystem productivity in these upland streams is relatively low, with aquatic insects gleaned much of their diet from material that falls into running water. In larger, slower tributaries, more plant material is produced in the stream itself. The mainstem supports a highly productive algal community that blooms as temperatures rise in the summer. Insects and some vertebrates feed on these plants, and many vertebrates, including salmonids, feed on stream-dwelling insects. Much of the habitat for Willamette River salmonids has been degraded by various land use practices or eliminated by dams. Wild salmonid populations have declined precipitously over the last century in the Willamette River (WRI 1999).

The Tualatin River watershed covers approximately 712 square miles of northwestern Oregon between the Coast Range and the Willamette River. The river is approximately 83 miles long. The discharge to the Willamette River is approximately three miles upstream from Willamette Falls, at an elevation of 49 feet NGVD. The base level for most of the Tualatin River watershed

is determined by a basalt ledge approximately 1.8 miles upstream from the mouth near a USGS gauging station (gage datum 85.61 feet NGVD). Most of the basin (82% of the watershed) from this point to a gauging station at river mile 59 is low gradient (0.0002) with a broad floodplain. Only a small fraction of the drainage basin at the edge of the Coast Range is high gradient.

A significant portion of the Tualatin River and its tributaries are listed on the Oregon Department of Environmental Quality's 303(d) list for water quality including temperature, bacteria, dissolved oxygen, pH and biological criteria. Heat loading during the summer low flow period is a major stressor for salmonids in the Tualatin River system. The proposed total maximum daily load (TMDL) requires summer water temperature in the Tualatin River to be maintained below 64° F to protect salmonid populations within the river. Much of the heat load for the mainstem of the Tualatin River comes from smaller, shallower tributaries that flow through agricultural areas with less shading.

In the project area, the surrounding area is dominated by agriculture and recreational use. To the northeast of the bridge, the land was recently disturbed for the construction of a City of Hillsboro park. In the riparian area closest to the river, the land has been cleared for future development of a parking lot and boat launch area. To the northwest, the riparian area is dominated by Pacific willow, red osier dogwood and Oregon ash. To the southwest, the land is actively used for agriculture and is dominated by grass and weedy forbs. There are 0.18 acres of wetlands that will be affected near the south approach of the proposed bridge.

2.1.3 Analysis of Effects

2.1.3.1 Effects of the Proposed Action

The proposed action is to remove and replace an existing bridge on the Tualatin River. The demolition and construction of a new bridge is expected to result in minimal disturbance of stream substrate, and therefore minimal displacement of any sediment which may be present in the stream substrate. Even though this substrate disturbance is expected to be minimal, some short-term turbidity may occur in the Tualatin River. The short-term increase in turbidity could result in temporarily-reduced feeding efficiency for juvenile salmonids in the project area, and for a short distance downstream.

The effects of suspended sediment and turbidity on fish, as reported in the literature, range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorous fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984, Lloyd

1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). Turbidity resulting from the proposed project will be confined to the construction and removal of the temporary structures, the removal of bents from the existing bridge, and the placement of bents for the new bridge. The turbidity resulting from this in-water work will be limited in space and time.

The in-water work proposed will also alter the substrate in the river where existing bents are placed. The substrate will be disturbed when the bents are removed. In the long term, the substrate will become more stable and even, due to the reduction of the number of pile bents in the river supporting the bridge.

The proposed project also includes construction of a temporary work bridge and access road in order to complete the demolition and construction of the new bridge. These temporary structures will be left in place for one year, then removed during the following in-water work window. This may cause short-term effects, such as turbidity and disturbed substrate as discussed above. However, if the temporary structures were installed and removed during each of two in-water work windows, the potential for effects on salmonids would be doubled. The pilings supporting the temporary work bridge are not expected to alter the hydrology or hydraulics of the river within the action area. Construction and removal will occur only once, therefore, disturbance to the substrate, water column and surrounding riparian areas will be minimized.

Riparian habitats are one of the most ecologically-productive and diverse terrestrial environments (Kondolf *et al.* 1996, Naiman *et al.* 1993). Vegetation in riparian areas provide soil stability, shade, large wood (LW) supply, and food for fish and their prey. In addition, riparian vegetation and LW can provide low-velocity shelter habitat for fish during periods of flooding. Instream LW provides similar habitat at all flow levels, as well as shelter from predators, habitat for prey species, and sediment storage and channel stability attributes (Spence *et al.* 1996).

The manipulation of vegetation and LW associated with construction in riparian areas and in stream channels can change the characteristics of the riparian area in ways which would tend to adversely affect fish. Short-term effects on vegetation include the outright destruction or removal of vegetation and LW, as well as lesser disturbances such as: (1) Trampling; (2) shallow or temporary burial by stockpiled material; (3) temporary displacement of LW; and (4) trimming, mowing, and scraping of vegetation. Long-term effects include permanent, or near-permanent, displacement of habitat vegetation through paving, armoring, or maintenance of utility or access corridors. Such long-term effects on vegetation would also tend to cause a long-term reduction in riparian and instream LW. The proposed project includes minimization measures to avoid as much loss of riparian vegetation as possible. All disturbed riparian areas will be planted with native vegetation after construction is complete.

The preferred in-water work period for the Tualatin River is between June 1 and September 30. There is the potential for juvenile UWR steelhead to occur in the Tualatin River, however, they

are not expected to be in the project area during the in-water work period. Any juveniles present are expected to avoid construction areas due to noise and turbidity. Direct mortality of juvenile UWR steelhead is expected to be minimal.

2.1.3.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of “future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation.” Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

2.1.4 Conclusion

NOAA Fisheries has determined, based on the information, analysis, and assumptions described in this Opinion, that the issuance of a permit to Washington County for replacement of the Rood Road Bridge is not likely to jeopardize the continued existence of UWR steelhead. In arriving at this determination, NOAA Fisheries considered the status of the listed species, the environmental baseline conditions, the direct and indirect effects of approving the action, and the cumulative effects of actions anticipated in the action area.

NOAA Fisheries evaluated the proposed action and found that it would cause short-term adverse degradation of some environmental baseline indicators for listed species. Timing and construction restrictions would minimize these impacts. Construction materials (concrete) will not affect water quality post construction. Plantings in bioswales and adjacent riparian areas would alleviate any long-term impacts to the existing riparian areas and potentially improve the existing condition. The swales and manhole will treat stormwater that currently flows untreated from the bridges directly into the Tualatin River. The amount of pile bents in the river will be reduced from the 31 bents currently supporting the bridge, to 7 bents supporting the new bridge. Thus, the effects of the proposed action would not reduce water quality, substrate or riparian vegetation to a level that would appreciably diminish the likelihood of survival and recovery of listed fishes.

The proposed action is not likely to impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.1.5 Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded, (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the information provided by the COE and this Opinion, (3) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered, or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

If the COE fails to provide specified monitoring information by the required date, NOAA Fisheries will consider that a modification of the action that causes an effect on listed species not previously considered, and would cause this Opinion to expire. To reinitiate consultation, contact the Habitat Conservation Division (Oregon Habitat Branch) of NOAA Fisheries.

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as action that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of listed species. Effects of actions such as these are largely unquantifiable and are not expected to be measurable as long-term effects on population levels. Therefore, even though NOAA Fisheries expects some low-level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, the NOAA Fisheries designates the expected level of

take as “unquantifiable”. Based on the information provided by the COE, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion.

2.2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The COE has the continuing duty to regulate the activities covered in this incidental take statement. If the COE fails to require the applicants to adhere to the terms and conditions of this incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

NOAA Fisheries believes that, in addition to the conditions proposed by the COE, the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of listed fish resulting from implementation of the project.

1. The COE shall minimize the likelihood of incidental take from bridge construction by applying conditions to avoid or minimize disturbance to riparian and aquatic systems.
2. The COE shall monitor project implementation and report the results to ensure that the terms and conditions included in this Opinion are effective in minimizing the likelihood of take from permitted activities.

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the COE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure # 1 (minimize disturbance to riparian and aquatic systems), the COE shall ensure:
 - a. Timing of in-water work. Work within the active channel will be completed during the preferred in-water work period of June 1 to September 30, unless otherwise approved in writing by NOAA Fisheries.
 - b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
 - c. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during construction, and after construction for the life of the project. Upstream passage is not required during construction if it did not previously exist.

- d. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations.
- i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
- (1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - (2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
 - (3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
 - (4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - (5) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.
- ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.¹
- (1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.
 - (2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.
- e. Construction discharge water. All discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:
- i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
- ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed 4-feet per second.

¹ "Working adequately" means no turbidity plumes are evident during any part of the year.

- iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300 feet upstream of spawning areas or areas with marine submerged vegetation.
- f. Treated wood. Projects using treated wood² for any structure that may contact flowing water or that will be placed over water are not authorized, except for pilings installed following NOAA Fisheries' guidelines.³ Projects that require removal of treated wood will use the following precautions:
 - i. Treated wood debris. Care must be taken to ensure that no treated wood debris falls into the water. If treated wood debris does fall into the water, it must be removed immediately.
 - ii. Removal of treated pilings. If treated wood pilings will be removed, the following conditions apply:
 - (1) Pilings must be dislodged with a vibratory hammer.
 - (2) Once loose, the pilings must be placed onto the construction barge or other appropriate dry storage location, and not left in the water or piled onto the streambank.
 - (3) If pilings break during removal, the stump must be removed by breaking or cutting three feet below the sediment surface, then covered with a substrate appropriate for the site.
 - iii. Disposal of treated wood debris. All treated wood removed during a project must be disposed of at a facility approved for hazardous materials of this classification.
- g. Preconstruction activity. Before significant⁴ alteration of the project area, the following actions must be completed:
 - i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite:
 - (1) A supply of sediment control materials (*e.g.*, silt fence, straw bales⁵).

² "Treated wood" means lumber, pilings, and other wood products preserved with alkaline copper quaternary (ACQ), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), copper naphthenate, chromated copper arsenate (CCA), pentachlorophenol, or creosote.

³ Letter from Steve Morris, National Marine Fisheries Service, to W.B. Paynter, Portland District, U.S. Army Corps of Engineers (December 9, 1998) (transmitting a document titled *Position Document for the Use of Treated Wood in Areas within Oregon Occupied by Endangered Species Act Proposed and Listed Anadromous Fish Species*, National Marine Fisheries Service, December 1998).

⁴ "Significant" means an effect can be meaningfully measured, detected or evaluated.

⁵ When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

- (2) An oil-absorbing floating boom whenever surface water is present.
 - iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.
- h. Temporary access roads.
 - i. Existing ways. Existing roadways or travel paths must be used whenever possible.
 - ii. Steep slopes. Temporary roads built mid-slope or on slopes steeper than 30% are not authorized.
 - iii. Minimizing soil disturbance and compaction. When a new temporary road is necessary within 150 feet⁶ of a stream, water body or wetland, soil disturbance and compaction must be minimized by clearing vegetation to ground level and placing clean gravel over geotextile fabric, unless otherwise approved in writing by NOAA Fisheries.
 - iv. Temporary stream crossings.
 - (1) The number of temporary stream crossings must be minimized.
 - (2) Temporary road crossings must be designed as follows:
 - (a) A survey must identify and map any potential spawning habitat within 300 feet downstream of a proposed crossing.
 - (b) No stream crossing may occur at known or suspected spawning areas, or within 300 feet upstream of such areas if spawning areas may be affected.
 - (c) The crossing design must provide for foreseeable risks (*e.g.*, flooding and associated bedload and debris) to prevent the diversion of streamflow out of the channel and down the road if the crossing fails.
 - (d) Vehicles and machinery must cross riparian areas and streams at right angles to the main channel wherever possible.
 - v. Obliteration. When the project is completed, all temporary access roads must be obliterated, the soil must be stabilized, and the site must be revegetated.
- i. Heavy Equipment. Use of heavy equipment will be restricted as follows:
 - i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse affects on the environment (*e.g.*, minimally-sized, rubber-tired).
 - ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:

⁶ Distances from a stream or water body are measured horizontally from, and perpendicular to, the bankfull elevation, the edge of the channel migration zone, or the edge of any associated wetland, whichever is greater. "Channel migration zone" means the area defined by the lateral extent of likely movement along a stream reach where there is evidence of active stream channel movement over the past 100 years, *e.g.*, alluvial fans or floodplains formed where the channel gradient decreases, the valley abruptly widens, or at the confluence of larger streams.

- (1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.
 - (2) All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation.
 - (3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.
 - iii. Stationary power equipment. Stationary power equipment (e.g., generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.
- j. Site preparation. Native materials will be conserved for site restoration.
 - i. If possible, native materials must be left where they are found.
 - ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.
 - iii. Any large wood⁷, native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.
- k. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.
 - i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1 and September 30, or within 2 days between October 1 and May 31.
 - ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.
- l. Construction of new impervious surface/stormwater management.
 - i. Any project that will produce new surfaces or land use conversions that retard the entry of water into the soil must control the quantity and quality of the resulting stormwater runoff for the life of the project.
 - (1) Permeable pavements must be installed and maintained for load-bearing surfaces, including multiple use trails, wherever soil, slope and traffic conditions allow.

⁷ For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

- (2) Stormwater must be infiltrated or dispersed onsite to the maximum extent possible without causing flooding or erosion impacts.
 - (3) When runoff must be discharged into a freshwater system, the following requirements apply:
 - (a) The area must be drained by a conveyance system comprised entirely of manufactured elements (e.g., pipes, ditches, outfall protection) that extends to the ordinary high water line of the receiving water.
 - (b) Any erodible elements of this system must be adequately stabilized to prevent erosion.
 - (c) Surface water from the area must not be diverted from or increased to an existing wetland, stream or near-shore habitat sufficient to cause a significant adverse effect.
 - (4) Runoff treatment facilities must be designed, built and maintained to collect runoff from the project site, including bridges, using the best available technology applicable to the site conditions. Treatment must be provided to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
 - m. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:
 - i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.
 - ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.
 - iii. Revegetation. Areas requiring revegetation must be replanted before April 15 with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.
 - iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.
 - v. Fertilizer. No surface application of fertilizer may occur within 50 feet of any stream channel.
2. To implement reasonable and prudent measure # 2 (monitoring and reporting), the COE shall ensure:
- a. Implementation monitoring. Ensure that each permittee submits a monitoring report to the COE within 120 days of project completion describing the permittee's success meeting his or her permit conditions. Each project level monitoring report will include the following information:
 - i. Project identification

- (1) Permittee name, permit number, and project name.
- (2) Category of activity
- (3) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS seven-minute quadrangle map
- (4) COE contact person.
- (5) Starting and ending dates for work completed
- ii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.⁸
 - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
 - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
- iii. Other data. Additional project-specific data, as appropriate for individual projects.
 - (1) Dates (if any) work cessation was required due to high flows.
 - (2) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.
 - (3) Site preparation.
 - (a) Total cleared area – riparian and upland.
 - (b) Total new impervious area.
 - (4) Site restoration.
 - (a) Finished grade slopes and elevations.
 - (b) Log and rock structure elevations, orientation, and anchoring (if any).
 - (c) Planting composition and density.
 - (d) A five-year plan to:
 - (i) Inspect and, if necessary, replace failed plantings to achieve 100 percent survival at the end of the first year, and 80 percent survival or 80 percent coverage after five years (including both plantings and natural recruitment).
 - (ii) Control invasive non-native vegetation.
 - (iii) Protect plantings from wildlife damage and other harm.
 - (iv) Provide the COE annual progress reports.

⁸ Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

- (5) Monitoring reports will be submitted to:
National Marine Fisheries Service
Attn: 2003/00014
525 NE Oregon Street, Suite 500
Portland, OR 97232

- b. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661, or call: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Magnuson-Stevens Fishery Management and Conservation Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate;

“substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA, the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species’ EFH from the proposed action is based, in part, on this information.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. The action area includes the Tualatin River near Rood Bridge Road. This area has been designated as EFH for various life stages of coho salmon and designated as currently accessible but unutilized historic habitat for chinook salmon.

3.4 Effects of Proposed Action

As described in detail in section 2.1.3.1 of this document, the proposed activity may result in short-term adverse effects to a variety of habitat parameters. These adverse effects are: (1) Turbidity from bridge construction; (2) disturbance of riparian vegetation; and (3) disturbance to substrate.

3.5 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect EFH for chinook and coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the FHWA, all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

3.7 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.8 Supplemental Consultation

The COE must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

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